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EXAMINER	
KOCH, GEORGE R	

ART UNIT	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/900,532	CHRISTOPHER ET AL.	
	Examiner	Art Unit	
	George R. Koch III	1734	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 January 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-31 and 68* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-31 and 68* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. Claims 1-12, and 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Csipkes and further view of Uehara (US 4,916,811).

Csipkes discloses an automated fiber preparation apparatus for an optical fiber, comprising a transporter having upstream and downstream end configured to automatically index a tray (item 158, 156, and 140) to a plurality of process stations in a direction from the upstream end toward the downstream end in response to a control signal (see Figure 2). Csipkes also discloses strip tools and cleave tools as claimed (items 130a and 130c).

Csipkes does not disclose simultanesously indexing a plurality of trays, each of the trays being configured to hold an optical fiber.

Uehara discloses simultaneously indexing a plurality of trays, each of the trays being configured to hold an optical fiber (see Figure 4). One in the art would immediately recognize that moving multiple trays allows for multiple operations to be performed simultaneously on a sequence trays, thus improving throughput. Therefore, it would have been obvious to one of oridinary skill in the art at the time of the invention to have simultaneously indexing a plurality of trays, each of the trays being configured to hold an optical fiber in order to achieve greater throughput in the manufacturing operation.

As to claim 2, Csipkes discloses that the cleave tool is positioned between the strip tool and the downstream end of the transporter (see column 8, lines 1-25, which states that the first module 130a is a stripper, and the third module 130c is a cleaver).

As to claim 3, Csipkes discloses a cleaning tool (130b, Figure 2) between the upstream and downstream end of the transporter (item 140).

As to claim 4, Csipkes discloses that the cleaning tool is positioned between the strip tool and the downstream end of the transporter (see column 8, lines 1-25, which states that the first module 130a is a stripper, and the second module 130b is a cleaning module).

As to claims 10 and 11, Csipkes discloses loading and unloading modules as claimed (see column 4, lines 12-18). Csipkes discloses that the tray is loaded, not just the optical fiber.

As to claim 15, Csipkes discloses a tray (item 330, Figure 3).

Furthermore, as to claim 16, Csipkes discloses that the tray is constructed to retain at least one end portion of the optical fiber extending outwardly beyond the outer perimeter (see Figure 3).

As to claim 5, Csipkes does not disclose a spooling tool as claimed.

Uehara discloses a spooling tool positioned between the upstream end of the transporter (item 13, the upstream end of the transporter is defined as the start of the transfer unit 14 plus conveyor 22) and the downstream end of the transporter, the spooling tool being constructed and arranged to automatically wind, in response to a control single (taken to be the apparatus activation) the optical fiber into a coiled fiber

that includes at least one coil of fiber with the end portion extending from at least one coil (see Figure 8, which shows at least one end extending past the coil). Uehara discloses that their particular coiling operation makes stable the posture of the cable for greater facility of its extraction and transfer (column 7, lines 15-18). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have utilized such a coiler in order to facilitate extraction and transfer.

Further, as to claim 6, Uehara discloses placing the coil into a tray.

As to claim 7, the positioning of coiling tool 13 and transfer tool 14 which places the coil onto tray 21 in Uehara is considered between the upstream end of the transporter and the strip tool.

As to claim 8, Csipkes does not disclose a ferrule attachment tool. Csipkes does disclose that a "connecterization" process can be performed, but is silent as to the details (column 8, lines 27-32). One in the art would appreciate that any conventional connecterization process and module would be used.

Uehara discloses a conventional connecterization process and module which is called a ferrule attachment tool (item 18) and is positioned between the upstream and downstream end of the transporter, the ferrule attachment tool being constructed and arranged to automatically attach a ferrule to the end portion of the optical fiber in response to the control signal. One of ordinary in the art would appreciate that a ferrule attachment stage would properly prepare the ends of the optical fiber for subsequent use in connecting to other optical devices. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have utilized a ferrule

attachment apparatus in order to properly prepare the ends of the optical fiber and improve the usefulness of the product.

Furthermore, as to claim 9, neither reference explicitly discloses that the ferrule attachment occurs after a cleaving (or cleaning process), although Csipkes does disclose cleaving and connectorization. The cleaving step prepares the fiber for further processing. Furthermore, it would have been logical to perform the cleaving and cleaning prior to the ferrule attachment, since once the ferrule is attached, no cleaning and cleaving can take place since the ferrule permanently covers the fiber ends. Therefore, any cleaving and cleaning which prepares the fiber for connectorization or attachment would need to occur prior to the connection or attachment. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have utilized a cleaving step prior to the attachment step and thus have the ferrule attachment module situated between the cleave tool and the downstream end of the transporter in order to ensure that the fiber is adequately prepared for the ferrule attachment.

As to claim 12, Csipkes does not disclose moving the tray in a linear transport direction. Uehara discloses moving the work object in a straight line. One in the art would appreciate that such a movement system would allow for the addition of subsequent operations as shown in Uehara. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have utilized the linear transport directions of the Uehara in order to achieve the capability of adding subsequent operations as in Uehara.

As to claim 14, Csipkes does not disclose a fiber placement tool.

However, Uehara discloses a fiber placement tool, called the cable end positioning unit. See column 8, line 35 to column 10, line 13). Uehara discloses that the fiber placement unit serves to place and keep the ends of the cable loop in correct positioning for easy processing. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have utilized a fiber placement tool in order to facilitate processing of the fiber ends.

2. Claims 1-12 and 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uehara in view of Csipkes (US Patent 6,122,936).

As to claim 1 and 12, Uehara discloses an automated fiber preparation apparatus for an optical fiber comprising a transporter (item 22 - see Figure 4) having upstream and downstream end, and being constructed and arranged to automatically index a tray (item 21) , in a direction from the upstream end toward the downstream end in response to a control signal, a fiber preparation module such as a strip tool (any of items 11-19, such as stripper 15, adhesive applying unit 17, ferrule mounting unit 18, etc) including at least one automated fiber preparation tool positioned between the upstream end and the downstream end thereof (see Figure 4 which shows this orientation), the at least one fiber preparation tool being constructed and arranged to automatically process an end portion of the optical fiber in response to a control signal (which can be the signal to operate the apparatus). The control signal, the location from which is undefined in the

claims, is taken to be merely an activation signal. In any event, Csipkes discloses that it is known to utilize a control system sending out activation signals (best seen in Figure 2 of Csipkes). Furthermore, Uehara discloses that the apparatus can simulataneously index a plurality of trays, and that each of the trays holds an optical fiber (see Figures 4 and 8).

As to claim 1 and 2, Uehara does not discloses a cleave tool for use in fiber preparation or where the cleaving tool is located relative to the strip tool and the transporter.

However, Csipkes discloses a cleave tool for use in fiber preparation. Csipkes also discloses that the cleave tool is positioned between the strip tool and the downstream end of the transporter. One of ordinary skill in the art would appreciate that the cleave tool prepares the fiber for ferrule attachment by cleaving the fiber into the appropriate size. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to include a cleave tool in order to ensure that the fiber was cleaved to the appropriate size prior to ferrule attachment.

Furthermore, as to claim 12, the transporter is configured to index the tray in a linear direction (see Figure 4).

As to claim 3 and 4, Uehara does not disclose cleaning tool, or where the cleaning tool is located relative to the strip tool and the transporter.

However, Csipkes discloses a cleaning tool for use in fiber preparation. Csipkes also discloses that the cleaning tool is positioned between the strip tool and the downstream end of the transporter. One of ordinary skill in the art would appreciate that

a cleaning tool would foreign particles from the fiber, especially foreign particles created by the strip tool, and improve the optical qualities. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have utilized a cleaning tool positioned between the strip tool the downstream end of the transporter in order to eliminate foreign particles from the fiber and improve optical quality.

As to claim 5, Uehara discloses a spooling tool positioned between the upstream end of the transporter (item 13, the upstream end of the transporter is defined as the start of the transfer unit 14 plus conveyor 22) and the downstream end of the transporter, the spooling tool being constructed and arranged to automatically wind, in response to a control single (taken to be the apparatus activation) the optical fiber into a coiled fiber that includes at least one coil of fiber with the end portion extending from at least one coil (see Figure 8, which shows at least one end extending past the coil).

Further, as to claim 6, Uehara discloses placing the coil into a tray.

As to claim 7, the positioning of coiling tool 13 and transfer tool 14 which places the coil onto tray 21 in Uehara is considered between the upstream end of the transporter and the strip tool.

As to claim 8, Uehara discloses a ferrule attachment tool (item 18) positioned between the upstream and downstream end of the transporter, the ferrule attachment tool being constructed and arranged to automatically attach a ferrule to the end portion of the optical fiber in response to the control signal.

Furthermore, as to claim 9, neither reference explicitly discloses that the ferrule attachment occurs after a cleaving (or cleaning process), although Csipkes does

disclose cleaving and connectorization. The cleaving step prepares the fiber for further processing. Furthermore, it would have been logical to perform the cleaving and cleaning prior to the ferrule attachment, since once the ferrule is attached, no cleaning and cleaving can take place since the ferrule permanently covers the fiber ends. Therefore, any cleaving and cleaning which prepares the fiber for connectorization or attachment would need to occur prior to the connection or attachment. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have utilized a cleaving step prior to the attachment step and thus have the ferrule attachment module situated between the cleave tool and the downstream end of the transporter in order to ensure that the fiber is adequately prepared for the ferrule attachment.

As to claims 10 and 11, Uehara is silent as to load and unload modules.

However, Csipkes discloses loading and unloading modules as claimed (see column 4, lines 12-18). Csipkes discloses that the tray is loaded, not just the optical fiber. One of ordinary skill in the art would appreciate that the loading and unload modules allows for secure transport of the trays and for ease in transport of the trays to subsequent operations (see column 4, lines 12-18). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have utilized load and unload modules in order to manipulate the trays as needed for prior and subsequent operations.

As to claim 14, Uehara discloses a fiber placement tool, called the cable end positioning unit. See column 8, line 35 to column 10, line 13). Uehara discloses that

the fiber placement unit serves to place and keep the ends of the cable loop in correct positioning for easy processing.

As to claim 15, Uehara discloses a tray in combination with the apparatus.

As to claim 16, Uehara discloses that the tray is constructed and arrange to retain at least one end portion of the optical fiber extending outwardly beyond the outer perimeter.

3. Claims 13 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uehara and Csipkes as applied to claim 1 above, or alternatively of Csipkes as applied to claim 1 above, and further in view of Bloom (US 6,003,341).

As to claim 13, both Uehara and Csipkes do not disclose using a walking beam.

Bloom discloses a walking beam (item 160, Figure 22). Bloom discloses that the walking beam, called a support bar, holds the structures and trays in a precise position and in a predetermined and known position (column 22, lines 40-54). One ordinary skill in the art would appreciate that this capability of precisely positioning the trays and the holding structures would improve functioning and positioning of the work modules or work apparatus relative to the optical fibers. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have utilized such a walking beam in order to precisely position the trays for the work apparatus.

As to claim 17, Uehara and Csipkes discloses a tray (item 21) but does not disclose that the tray includes a fiber receptacle disposed between opposing ends

thereof, but neither reference as applied above disclose that the fiber receptacle is constructed and arranged to contain the optical fiber therein with opposing end portions of the optical fiber extending toward the opposing ends of the tray.

Bloom discloses that the tray includes a fiber receptacle disposed between opposing ends thereof, the fiber receptacle being constructed and arranged to contain the optical fiber therein with opposing end portions of the optical fiber extending toward the opposing ends of the tray. (See Figure 25, which discloses that the end portions of the optical fibers extend toward opposing ends of the tray). Bloom shows that such an orientation allows for manipulation of the ends. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have utilized such a tray which contains the optical fiber therein with opposing end portions of the optical fiber extending toward the opposing ends of the tray since such a tray allows for easier and quicker manipulation of the ends of the fibers.

4. Claims 18-19, 23-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Csipkes in view of Bloom (US 6,003,341)

As to claim 18, Csipkes discloses a transporter (item 300) and a fiber preparation module (any of items 130a-130g) which is constructed and arranged to automatically process the opposing end portions of the optical fiber (see, for example, Figure 8 and 14-19, which show processing of opposing end portions) in response to the control signal (taken to be the activation signal).

Csipkes discloses a tray (item 330, figure 3) but does not disclose that the tray includes a fiber receptacle disposed between opposing ends thereof, the fiber receptacle being constructed and arranged to contain the optical fiber therein with opposing end portions of the optical fiber extending toward the opposing ends of the tray.

Furthermore, Csipkes does not discloses placing the fiber preparation tools on opposite sides of the transporter.

Bloom discloses that the tray includes a fiber receptacle disposed between opposing ends thereof, the fiber receptacle being constructed and arranged to contain the optical fiber therein with opposing end portions of the optical fiber extending toward the opposing ends of the tray. (See Figure 25, which discloses that the end portions of the optical fibers extend toward opposing ends of the tray). Bloom shows that such an orientation allows for manipulation of the ends. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have utilized such a tray which contains the optical fiber therein with opposing end portions of the optical fiber extending toward the opposing ends of the tray since such a tray allows for easier and quicker manipulation of the ends of the fibers. Similarly, while Bloom does not disclose the positioning of the fiber preparation tools, one would appreciate that the use of such trays would allow for the rearrangement of the workstations disclosed in Csipkes. Such a reaarangement is well within the capabilities of a mere practiciioner of the art, and would be determined by the desired logistical requirements: *In Re Japikse*, 181 F.2d 1019, 86 USPQ 70 (CCPA 1950) - see also MPEP 2144.04. Therefore, it would have

been obvious to one of ordinary skill in the art at the time of the invention to have utilized fiber preparation tools on both sides of the transporter in order to ensure that space logistics are maximized.

As to claim 19, Csipkes discloses a fiber strip tool, cleave tool and clean tool as one the automated fiber preparation tool which processes the opposing end positions. Csipkes also discloses a connectorization tool which is considered a ferrule attachment tool.

As to claims 23 and 24, Csipkes discloses loading and unloading modules as claimed (see column 4, lines 12-18). Csipkes discloses that the tray is loaded, not just the optical fiber. One of ordinary skill in the art would appreciate that the loading and unload modules allows for secure transport of the trays and for ease in transport of the trays to subsequent operations (see column 4, lines 12-18).

As to claim 25, Csipkes discloses that the tray is constructed and arranged to support opposing end portions of the optical fiber. Bloom as incorporated discloses that the optical fiber extends beyond the opposing ends of the tray.

5. Claims 19-22 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Csipkes and Bloom as applied to claim 18 above, and further in view of Uehara.

As to claim 19, while Csipkes discloses the strip, cleave and clean tools, Csipkes can be considered as silent as to the ferrule attachment tool.

Csipkes does disclose that a "connecterization" process can be performed, but is silent as to the details (column 8, lines 27-32). One in the art would appreciate that any conventional connecterization process and module would be used.

Uehara discloses a conventional connecterization process and module which is called a ferrule attachment tool (item 18) and is positioned between the upstream and downstream end of the transporter, the ferrule attachment tool being constructed and arranged to automatically attach a ferrule to the end portion of the optical fiber in response to the control signal. One of ordinary in the art would appreciate that a ferrule attachment stage would properly prepare the ends of the optical fiber for subsequent use in connecting to other optical devices. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have utilized a ferrule attachment apparatus in order to properly prepare the ends of the optical fiber and improve the usefulness of the product.

As to claim 20, Csipkes does not disclose a spooling tool as claimed.

Uehara discloses a spooling tool positioned between the upstream end of the transporter (item 13, the upstream end of the transporter is defined as the start of the transfer unit 14 plus conveyor 22) and the downstream end of the transporter, the spooling tool being constructed and arranged to automatically wind, in response to a control single (taken to be the apparatus activation) the optical fiber into a coiled fiber that includes at least one coil of fiber with the end portion extending from at least one coil (see Figure 8, which shows at least one end extending past the coil). Uehara discloses that their particular coiling operation makes stable the posture of the cable for

greater facility of its extraction and transfer (column 7, lines 15-18). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have utilized such a coiler in order to facilitate extraction and transfer.

Further, as to claim 21, Uehara discloses placing the coil into a tray (via the use of transfer apparatus 14).

As to claim 22, the positioning of coiling tool 13 and transfer tool 14 which places the coil onto tray 21 in Uehara as incorporated is considered between the upstream end of the transporter and the strip tool.

As to claim 26, Csipkes does not disclose a fiber placement tool.

However, Uehara discloses a fiber placement tool, called the cable end positioning unit. See column 8, line 35 to column 10, line 13). Uehara discloses that the fiber placement unit serves to place and keep the ends of the cable loop in correct positioning for easy processing. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have utilized a fiber placement tool in order to facilitate processing of the fiber ends.

6. Claims 18-22 and 25-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uehara in view of Bloom (US 6,003,341)

As to claim 18, Uehara discloses a transporter (item 22) and a fiber preparation module (any of items 15-19) which is constructed and arranged to automatically process the opposing end portions of the optical fiber (see, for example, Figure 8 and 14-19,

which show processing of opposing end portions) in response to the control signal (taken to be the activation signal).

Uehara discloses a tray (item 21) but does not disclose that the tray includes a fiber receptacle disposed between opposing ends thereof, the fiber receptacle being constructed and arranged to contain the optical fiber therein with opposing end portions of the optical fiber extending toward the opposing ends of the tray.

Bloom discloses that the tray includes a fiber receptacle disposed between opposing ends thereof, the fiber receptacle being constructed and arranged to contain the optical fiber therein with opposing end portions of the optical fiber extending toward the opposing ends of the tray. (See Figure 25, which discloses that the end portions of the optical fibers extend toward opposing ends of the tray). Bloom shows that such an orientation allows for manipulation of the ends. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have utilized such a tray which contains the optical fiber therein with opposing end portions of the optical fiber extending toward the opposing ends of the tray since such a tray allows for easier and quicker manipulation of the ends of the fibers. Similarly, while Bloom does not disclose the positioning of the fiber preparation tools, one would appreciate that the use of such trays would allow for the rearrangement of the workstations disclosed in Csipkes. Such a reaarangement is well within the capabilities of a mere practiciioner of the art, and would be determined by the desired logistical requirements: *In Re Japikse*, 181 F.2d 1019, 86 USPQ 70 (CCPA 1950) - see also MPEP 2144.04. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have

utilized fiber preparation tools on both sides of the transporter in order to ensure that space logistics are maximized.

As to claim 19, Uehara discloses a fiber strip tool and a ferrule attachment tool as one the automated fiber preparation tool which processes the opposing end positions.

As to claim 20, Uehara discloses a spooling tool positioned between the upstream end of the transporter (item 13, the upstream end of the transporter is defined as the start of the transfer unit 14 plus conveyor 22) and the downstream end of the transporter, the spooling tool being constructed and arranged to automatically wind, in response to a control single (taken to be the apparatus activation) the optical fiber into a coiled fiber that includes at least one coil of fiber with the end portion extending from at least one coil (see Figure 8, which shows at least one end extending past the coil).

As to claim 21, Uehara discloses that the spooling tool is constructed and arranged to place the coiled fiber onto the tray.

As to claim 22, the positioning of coiling tool 13 and transfer tool 14 which places the coil onto the tray (item 21) in Uehara is considered between the upstream end of the transporter and the strip tool.

As to claim 25, Uehara discloses that the tray is constructed and arranged to support opposing end portions of the optical fiber. Bloom as incorporated discloses that the optical fiber extends beyond the opposing ends of the tray.

As to claim 26, Uehara discloses a fiber placement tool, called the cable end positioning unit. See column 8, line 35 to column 10, line 13). Uehara discloses that

the fiber placement unit serves to place and keep the ends of the cable loop in correct positioning for easy processing.

7. Claims 19, 23 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uehara and Bloom as applied to claim 18 above, and further in view of Csipkes.

As to claim 19, Uehara does not discloses a cleave tool for use in fiber preparation or where the cleaving tool is located relative to the strip tool and the transporter. Furthermore, Uehara does not disclose cleaning tool, or where the cleaning tool is located relative to the strip tool and the transporter.

However, Csipkes discloses a cleave tool for use in fiber preparation. Csipkes also discloses that the cleave tool is positioned between the strip tool and the downstream end of the transporter. One of ordinary skill in the art would appreciate that the cleave tool prepares the fiber for ferrule attachment by cleaving the fiber into the appropriate size. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to include a cleave tool in order to ensure that the fiber was cleaved to the appropriate size prior to ferrule attachment. Furthermore, Csipkes discloses a cleaning tool for use in fiber preparation. Csipkes also discloses that the cleaning tool is positioned between the strip tool and the downstream end of the transporter. One of ordinary skill in the art would appreciate that a cleaning tool would foreign particles from the fiber, especially foreign particles created by the strip tool, and improve the optical qualities. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have utilized a cleaning tool positioned

between the strip tool the downstream end of the transporter in order to eliminate foreign particles from the fiber and improve optical quality.

As to claims 23 and 24, Uehara is silent as to load and unload modules.

However, Csipkes discloses loading and unloading modules as claimed (see column 4, lines 12-18). Csipkes discloses that the tray is loaded, not just the optical fiber. One of ordinary skill in the art would appreciate that the loading and unload modules allows for secure transport of the trays and for ease in transport of the trays to subsequent operations (see column 4, lines 12-18). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have utilized load and unload modules in order to manipulate the trays as needed for prior and subsequent operations.

8. Claims 27-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uehara and Csipkes, and further in view of Verwey et al (US 4,214,848), and Brannen et al (US 5,607,282).

As to claim 27, Uehara discloses a transporter (item 22) and a fiber preparation module (any of items 15-19) which is constructed and arranged to automatically process the opposing end portions of the optical fiber (see, for example, Figure 8 and 14-19, which show processing of opposing end portions) in response to the control signal (taken to be the activation signal).

Uehara does not disclose a load module positioned at the upstream end of the transporter, the load module being constructed and arranged to automatically load the

tray onto the transporter in response to a control. Uehara does not disclose an unload module positioned at the downstream end of the transporter, the unload module being constructed and arranged to automatically unload the tray onto the transporter in response to a control.

Uehara is silent as to load and unload modules.

However, Csipkes discloses loading and unloading modules as claimed (see column 4, lines 12-18). Csipkes discloses that the tray is loaded, not just the optical fiber. One of ordinary skill in the art would appreciate that the loading and unload modules allows for secure transport of the trays and for ease in transport of the trays to subsequent operations (see column 4, lines 12-18). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have utilized load and unload modules in order to manipulate the trays as needed for prior and subsequent operations.

However, Csipkes is silent as to unloading the trays from a stack, and as to loading the trays in a stack.

Verwey, and Brannen disclose various tray or pallet stacking and unstacking systems. Verwey, for example, unloads pallets into a stack (see abstract, Figure 1). Brannen discloses loading pallets from a stack. Brannen discloses that an unloading eliminates manual labor (column 1, lines 16-60). Stacking is a known method of reducing workfloor space required for manufacturing. One in the art would immediately appreciate that eliminating manual labor from stacking operations decreases manufacturing costs and improves workplace safety. Therefore, it would have been

obvious to one of ordinary skill in the art at the time of the invention to have utilized stacks in both the loading and unloading stages in order to reduce workfloor space, increase safety, and reduce costs.

As to claim 28, Uehara discloses a fiber strip tool and a ferrule attachment tool as one the automated fiber preparation tool which processes the opposing end positions.

As to claim 28, Uehara does not disclose a cleave tool or a clean tool.

However, Csipkes discloses a cleave tool for use in fiber preparation. Csipkes also discloses that the cleave tool is positioned between the strip tool and the downstream end of the transporter. One of ordinary skill in the art would appreciate that the cleave tool prepares the fiber for ferrule attachment by cleaving the fiber into the appropriate size. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to include a cleave tool in order to ensure that the fiber was cleaved to the appropriate size prior to ferrule attachment. Furthermore, Csipkes discloses a cleaning tool for use in fiber preparation. Csipkes also discloses that the cleaning tool is positioned between the strip tool and the downstream end of the transporter. One of ordinary skill in the art would appreciate that a cleaning tool would foreign particles from the fiber, especially foreign particles created by the strip tool, and improve the optical qualities. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have utilized a cleaning tool positioned between the strip tool the downstream end of the transporter in order to eliminate foreign particles from the fiber and improve optical quality.

As to claim 29, Uehara discloses a spooling tool positioned between the upstream end of the transporter (item 13, the upstream end of the transporter is defined as the start of the transfer unit 14 plus conveyor 22) and the downstream end of the transporter, the spooling tool being constructed and arranged to automatically wind, in response to a control single (taken to be the apparatus activation) the optical fiber into a coiled fiber that includes at least one coil of fiber with the end portion extending from at least one coil (see Figure 8, which shows at least one end extending past the coil).

As to claim 30, Uehara discloses that the spooling tool is constructed and arranged to place the coiled fiber onto the tray,

As to claim 31, Uehara discloses a spooling tool positioned between the upstream end of the transporter (item 13, the upstream end of the transporter is defined as the start of the transfer unit 14 plus conveyor 22) and the downstream end of the transporter, the spooling tool being constructed and arranged to automatically wind, in response to a control single (taken to be the apparatus activation) the optical fiber into a coiled fiber that includes at least one coil of fiber with the end portion extending from at least one coil (see Figure 8, which shows at least one end extending past the coil). Uehara discloses that the spooling tool is constructed and arranged to place the coiled fiber onto the tray and the positioning of coiling tool 13 and transfer tool 14 which places the coil onto the tray (item 21) in Uehara is considered between the upstream end of the transporter and the strip tool.

As to claim 68, the apparatus of Uehara, Csipkes, Verwey and/or Brannen would be capable of stacking the trays as claimed.

9. Claims 27-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Csipkes in view of Verwey et al (US 4,214,848), and Brannen et al (US 5,607,282).

As to claim 27, Csipkes discloses a transporter (item 300) and a fiber preparation module (any of items 130a-130f) which is constructed and arranged to automatically process the opposing end portions of the optical fiber in response to the control signal (taken to be the activation signal).

Csipkes discloses loading and unloading modules as claimed (see column 4, lines 12-18). Csipkes discloses that the tray is loaded, not just the optical fiber. One of ordinary skill in the art would appreciate that the loading and unload modules allows for secure transport of the trays and for ease in transport of the trays to subsequent operations (see column 4, lines 12-18). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have utilized load and unload modules in order to manipulate the trays as needed for prior and subsequent operations.

However, Csipkes is silent as to unloading the trays from a stack, and as to loading the trays in a stack.

Verwey, and Brannen disclose various tray or pallet stacking and unstacking systems. Verwey, for example, unloads pallets into a stack (see abstract, Figure 1). Brannen discloses loading pallets from a stack. Brannen discloses that an unloading eliminates manual labor (column 1, lines 16-60). Stacking is a known method of reducing workfloor space required for manufacturing. One in the art would immediately

appreciate that eliminating manual labor from stacking operations decreases manufacturing costs and improves workplace safety. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have utilized stacks in both the loading and unloading stages in order to reduce workfloor space, increase safety, and reduce costs.

As to claim 28, Csipkes discloses a fiber strip tool, cleave tool and clean tool as one the automated fiber preparation tool which processes the opposing end positions. Csipkes also discloses a connectorization tool which is considered a ferrule attachment tool.

As to claim 68, the apparatus of Csipkes, Verwey and/or Brannen would be capable of stacking the trays as claimed.

10. Claims 28-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Csipkes, Verweey and Brannen as applied to claims 27-28 above, and further in view of Uehara.

As to claim 28, while Csipkes discloses the strip, cleave and clean tools, Csipkes can be considered as silent as to the ferrule attachment tool.

Csipkes does disclose that a "connecterization" process can be performed, but is silent as to the details (column 8, lines 27-32). One in the art would appreciate that any conventional connecterization process and module would be used.

Uehara discloses a conventional connecterization process and module which is called a ferrule attachment tool (item 18) and is positioned between the upstream and

downstream end of the transporter, the ferrule attachment tool being constructed and arranged to automatically attach a ferrule to the end portion of the optical fiber in response to the control signal. One of ordinary in the art would appreciate that a ferrule attachment stage would properly prepare the ends of the optical fiber for subsequent use in connecting to other optical devices. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have utilized a ferrule attachment apparatus in order to properly prepare the ends of the optical fiber and improve the usefulness of the product.

As to claim 29, Csipkes does not disclose a spooling tool as claimed.

Uehara discloses a spooling tool positioned between the upstream end of the transporter (item 13, the upstream end of the transporter is defined as the start of the transfer unit 14 plus conveyor 22) and the downstream end of the transporter, the spooling tool being constructed and arranged to automatically wind, in response to a control single (taken to be the apparatus activation) the optical fiber into a coiled fiber that includes at least one coil of fiber with the end portion extending from at least one coil (see Figure 8, which shows at least one end extending past the coil). Uehara discloses that their particular coiling operation makes stable the posture of the cable for greater facility of its extraction and transfer (column 7, lines 15-18). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have utilized such a coiler in order to facilitate extraction and transfer.

Further, as to claim 30, Uehara discloses placing the coil into a tray (via the use of transfer apparatus 14).

As to claim 31, the positioning of coiling tool 13 and transfer tool 14 which places the coil onto tray 21 in Uehara as incorporated is considered between the upstream end of the transporter and the strip tool.

Response to Arguments

11. Applicant's arguments with respect to claims 18-26 have been considered but are moot in view of the new ground(s) of rejection that address the issue of fiber preparation tools on both sides of the transporter.

12. Applicant's arguments with respect to claims 1-11 and 14-17 have been considered but are moot in view of the new ground(s) of rejection that address the new limitations in claim 1.

13. Applicant's arguments filed 1/2/2004 with respect to claims 1-17 and 27-31 have been fully considered but they are not persuasive.

14. In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning (such as in the incorporation of the work tool apparatus Cspikes into the overall apparatus of Uehara, or the stacking of the pallets/trays), it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to George R. Koch III whose telephone number is (571) 272-1230 (TDD only). If the applicant cannot make a direct TDD-to-TDD call, the applicant can communicate by calling the Federal Relay Service at 1-800-877-8339 and giving the operator the above TDD number. The examiner can normally be reached on M-Th 10-7.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

George R. Koch III
March 16, 2004

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